Salt and Nutrient Sources Pilot Study Scope of Work

Committee DRAFT VERSION 10 with edits from 1/9/09 meeting

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Text from this document will be used to prepare a solicitation package for procurement of these services from one or more consultants. Appendix A will be will be included as references for the project. Appendix B includes information related to the procurement process and will not be included in the scope. Phase 2 information will be provided to assist the consultant in understanding the long term use of the information and the workplan. Committee membership information above will also be deleted from the scope.

Performance Scope/Product Description

The selected consultant will provide all materials, equipment, labor, planning and coordination to provide the deliverables listed below with Technical and Economic Committee input and oversight. The consultant will provide a proposal documenting scope of work to be performed, project budget, project schedule and development of a peer/technical review panel. Each phase of this work may be separated in execution due to funding or program development timing.

Schedule and Budget

The consultant shall propose a budget and schedule for Phase 1 Task 1 separate from Task 2. The overall draft deliverable from Task 2 is due by September 2009 based on progress expectations from the regional board. The budget for the Phase 1 is expected to be between $100,000 and $250,000 for consultant efforts. The funding for the budget may be developed from multiple sources and this program may be contracted in component tasks due to funding

availability and timing. The consultant selected for Task 1 may or may not be retained for Task 2 or future phases of the program.

Phase 1 - Efforts and Deliverables

Task 1 and Task 2 are sequential and will be performed upon notice to proceed and approval of the contract. The work planning and data collection will be executed in an open and transparent process. Evaluation by the technical committee and stakeholders is critical to the success of the effort. All work will be coordinated with information or resources that may be available from participants, the regional board, prior works such as USGS NAWQA, WARMF model and the Central Valley Drinking Water Policy development and those listed in References in Attachment 1.

Task 1 - Pilot Work Plan

The pilot work plan shall select three to five areas representative of the Central Valley. Areas should represent the types of salt and nutrient-impacted communities across the region. Areas will be proposed by the consultant with review by the Technical and Executive committees. Pilot areas should also be picked based on factors such as: quantity and quality of available data, willingness to cooperate by local agencies, types of water use and salt and nutrient sources and representativeness for critical areas of the Central Valley.

The work plan will document the methods, manner and technical veracity of the work needed to characterize all "salt and nutrient sources of significance" in the pilot areas. Through the plan the consultant shall:

- define the term "salt and nutrient sources of significance" for the purposes of the plan and areas
- provide the methods and manner of collection and validation of the salt and nutrient source data for the pilot areas
- outline data that is currently available and the quality of the data
- identify additional data which will need to be developed
- indicate how the data collection shall account for
    - the total salt load salt balance and salt accumulation for each of the pilot areas
    - identify critical concentration discharges
- ensure the magnitude of each sources is accurate when combined into the overall salt balance
- identify how historic, current and future salt and nutrient source quantities will be collected or can be estimated to provide trend information
- identify and quantify areas where nutrients, especially nitrates are impacting beneficial uses of the waters
- select systems that will work for pilot areas and can be used in all other parts of the region.

It is critical for the consultant to propose methods that provide consistency in evaluation across sources and across the pilot areas. The methods must avoid double counting salt and nutrients as sources and validate salt and nutrients related to sources of water Because of the linkages with water supply each of the pilot areas should be reviewed for wet, dry and normal hydrologic years.

The constituents contributing to salinity impacts should be identified in the work plan and should be prioritized into tiers as indicated below in an evaluation process with the committee:

1. Salts as Total Dissolved Solids and/or EC, and separately but with equal importance Nitrates/nitrogen species
2. Other salt constituents chloride, phosphate, sulfate, carbonate, and bi-carbonate or others of local interest as recommended by the consultant. Consultant should propose data collection methods for all constituents, methods or timing may vary as appropriate.

Other constituents may also be addressed if project scoping or information uncovered during Phase I indicates a data requirement. The plan should propose methods that are consistent with prior works indicated in References shown as Attachment A and provide the most efficient collection and utilization. All collection efforts are intended to lead to the broader basin plan amendment work plan and the tie to fate and transport studies in future work phases, not included in this study. The studies will proceed only upon approval of the work plan by the committees and upon adequate funding.

Potential Areas for Consideration
The Economic and Social Cost and Technical Committees developed the following list of areas to be considered as potential pilot areas:

- A Foothills location
- A San Joaquin location
- A Tulare location
- A Sacramento area location(minus Delta)
- Areas covered by the Modesto/Hilmar SEP
- Specific areas mentioned were
    - Westlands
    - Panoche
    - Porterville
    - Davis/Woodland
    - Dixon
    - Vacaville
    - Fresno
    - Colusa
    - Mountain House

The Economic and Social Cost and Technical Committees developed the following list of possible criteria to include in choosing pilot areas:

- Representative area criteria
    - Ag with surface and groundwater use
    - Urban areas with food processing/industry
    - Rural with surface water
    - Rural with groundwater

The specific areas listed above are not all inclusive and the consultant should recommend any additional areas representative of the CV-SALTS interests to determine salt and nutrients sources. Additionally the representative area criteria listed above is not all inclusive and the consultant may recommend other criteria not listed here that can assist in determining salt and nutrient sources for a small area that assist in characterizing salt and nutrient sources for a larger geographic region of the Central Valley.

Task 2 - Pilot Salt and Nutrient Studies and Report

For each approved area the consultant shall collect, review and validate constituent data for the region in accordance with the work plan. If possible, the pilot areas should attempt to use delineated by natural hydrological boundaries, such as hydrological basins and sub-basins, avoiding political and other artificial boundaries unless necessary. The data will be collected and entered into a publicly available database or data structure as described in the approved work plan. The data should be collected and entered in a manner that makes it available for future modeling and fate and transport analysis. It should be processed and stored in a manner consistent with prior work indicated in References shown as Attachment A maximizing future usefulness of the data. Data shall be presented in detail and in summary to explain the net balance of salt in the area and the totals for generation, concentration, importation, mobilization and disposal. Based on information gathered the report will present estimates of past and future salt and nutrient quantities in summary and overall trends where they appear.

ATTACHMENT A - LIST OF REFERENCES FOR SALINITY SOURCES SURVEY SCOPE OF WORK

Prior Works

- Drinking Water Policy Development for Central Valley Basin Plan
- Santa Ana Basin Salt and Nitrate Basin Plan Amendment
- Staff Report for the San Joaquin River at Vernalis Salt and Boron TMDL and Basin Plan
- Amendment
- Hilmar SEP
- Rainbow Report
- Nitrate in Drinking Water Report to the Legislature – 1988 by State Water Board
- Water Quality Survey of Tile Drainage Discharges in the San Joaquin River Basin – 1988 by CV Regional Water Quality Control Board

Potential Data Sources

- Metadata Guide for Salinity Data Sources for the Central Valley of California – 2008 by the California Water Institute
- Technical Analysis to Support Development of Drinking Water Policy for the Central Valley Basin Plan
- Staff Report for the San Joaquin River at Vernalis Salt and Boron TMDL and Basin Plan Amendment
- Rainbow Report
- Nitrate in Drinking Water Report to the Legislature – 1988 by State Water Board
- SWAMP
- GAMA Data Series Reports - **http://ca.water.usgs.gov/gama/publications.htm.**
- DWR has lists of groups that have received public money for GW studies in recent years: http://www.grantsloans.water.ca.gov/grants/assistance.cfm these lists may include work that is not included in GAMA or any of the more accessible datasets.

ATTACHMENT B
INFORMATION RECOMMEND FOR PROCUREMENT

One member recommended a request for qualifications be submitted for approval prior to issuance of RFP.

Committee members recommended solicitation be provided to:

- Brown and Caldwell
- CH_2MHILL
- Bookman & Edmonston
- Kennedy Jenks
- USGS and CSUF, UC Merced, and UC Davis,
- Ecologic
- Wildermuth Environmental

Procurement Timeline (to be added)

Requirements
Terms and conditions
Funding contingency

Evaluation Criteria
Cost
Total cost
Breakdown of costs and explanation

Technical
Responsiveness to RFP
Proposed scope completeness
Qualifications
Experience

- Stakeholder projects
- Water quality
- Data acquisition and analysis
- Regional planning
- Salts and nutrients

Project Management
Qualifications
Cost and schedule
Coordination and reporting

NOTE - The Subcommittee has not completed review and changes to the Phase 2 effort. The Draft Sections below are intended only to provide an indication of future efforts.

Phase 2 Products and Deliverables

Regional Salt and Nutrient Sources Study
Phase 2 will expand on the pilot areas to cover all basins in the Central Valley, dependent on funding.

Regional Work plan
The consultant will prepare a work plan covering all aspects of the planning and implementation of the study needed to expand from the pilot areas to the rest of the region. The full study will integrate information from the pilots and the work plan will identify the minimum number of additional areas needed to achieve complete coverage of the region with a proposed level of certainty to be reviewed and approved by the committee. Work will include summarization of the total salt generated, imported, mobilized, concentrated or disposed in the region and show movements of salt from one area to another.

The studies will proceed only upon approval of the work plan by the committees and upon adequate funding.

Regional Salt and Nutrient Studies and Report
The Regional Salt and Nutrient Studies will implement the methodology and manner that was used in the pilot across the region and in accordance with the approved work plan. In addition to the data collected and summarized the report will classify salt and nutrient sources that have reduced or minimized their generation or concentration or that export salt from the basin. The report will identify salinity management best practices where possible and document them in the report.

Phase 3 Further Study Areas
Areas where information was estimated or where data was incomplete or could not be made available will be identified and investigated further in this phase.

- Develop Work plan
- Conduct Studies
- Prepare Report
- Incorporate into updated Regional Report